

Will Epperson

I'm a Ph.D. student in the HCII at CMU advised by Dominik Moritz and Adam Perer.

My research interests lie in **developing ways to make complex systems easier to use and understand for experts and non-experts**. I am interested in how we can build tools to help users interact with their data through understandable Machine Learning, interactive visualizations, and recommended analysis. I'm also interested in how these techniques can be applied to the medical domain to improve both doctor and patient experiences.

🏠 willepperson.com

✉ willepp@cmu.edu

📄 [CV PDF](#)

🐦 [@w_epperson](https://twitter.com/w_epperson)

🐙 [@willeppy](https://github.com/willeppy)

🎓 [Google Scholar](#)

🌐 [LinkedIn](#)

Education

August 2020 - Present

Ph.D. in Human Computer Interaction

Carnegie Mellon University

Advisors: Dominik Moritz, Adam Perer

Sample Coursework: Computational Medicine

August 2016 — May 2020

B.S. in Computer Science

Georgia Institute of Technology

GPA: 4.0, Summa Cum Laude, threads in Intelligence and Modeling/Simulation

Sample Coursework: Machine Learning, Deep Learning, Computer Vision, Computer Architecture, Algorithms, Computer Simulation, Information Visualization

Publications

FairVis: Visual Analytics for Discovering Intersectional Bias in Machine Learning

Angel Cabrera, Will Epperson, Fred Hohman, Minsuk Kahng, Jamie Morgenstern, Duen Horng (Polo) Chau

FairVis is a Visual Analytics system that allows users to audit their machine learning models for intersectional bias by exploring the model's performance on various user-specified and recommended subgroups in a dataset.

IEEE Conference on Visual Analytics Science and Technology (VAST). Vancouver, Canada, 2019.

🔗 [Project](#) ▶ [Demo](#) 📄 [PDF](#) 📝 [Blog](#) 🎥 [Recording](#) 📽 [Slides](#) ⚡ [Code](#) 📖 [BibTeX](#)

RECAST: Interactive Auditing of Automatic Toxicity Detection Models

Austin P. Wright, Omar Shaikh, Haekyu Park, Will Epperson, Muhammed Ahmed, Stephane Pinel, Diyi Yang, Duen Horng (Polo) Chau

RECAST is an interactive tool that allows users to audit toxicity detection models with their own input text and suggests alternative wordings for detected toxic speech.

The eighth International Workshop of Chinese CHI. 2020.

🔗 [Project](#) 📄 [PDF](#) 📖 [BibTeX](#)

Talks

FairVis

May 2019

IEEE Visualization Conference

Honors and Awards

PURA: President's Undergraduate Research Award \$1500 research grant to continue work on FairVis project	2019
Stamps President's Scholarship Full ride scholarship given to 40 incoming freshman at Georgia Tech	2016

Research Experience

Georgia Institute of Technology , Atlanta, GA <i>Undergraduate Researcher, Polo Club of Data Science</i> Advisor: Duen Horng (Polo) Chau Member of the Polo Club of Data Science working on novel data visualizations to find fairness issues in Machine Learning models <i>Relevant Skills:</i> Python, Javascript	January 2019 - May 2020
Georgia Institute of Technology , Atlanta, GA <i>Undergraduate Researcher, Automated Algorithm Design</i> Advisor: Jason Zutty, Greg Rohling Worked on EMAD algorithm design engine to implement sentiment analysis pipeline to analyze news articles to aid in predicting stock price movements using genetic algorithms. Led project to visualize the genetic algorithm evolution process. <i>Relevant Skills:</i> Python, Javascript	January 2018 - May 2019

Industry Experience

Point72 Asset Management , New York, NY <i>Data Analytics Intern, Market Intelligence Group</i> Mentor: Trevor Rempel Worked as Data Scientist in alternative data space to clean, model, and understand large datasets <i>Relevant Skills:</i> Python, Distributed Computing in Spark	Summer 2019
Ultimate Software , Weston, FL <i>Software Development Intern, Innovation Strategies Team</i> Mentor: Joseph Cutrono Designed and developed Slack app to integrate with the UltiPro HR management tool. App published to Slack app store. <i>Relevant Skills:</i> Typescript, REST API development	Summer 2018
The Home Depot , Atlanta, GA <i>Software Development Intern</i> Developed web app for tracking candidate progress throughout hiring process for internal HR use. <i>Relevant Skills:</i> Java, HTML/CSS/Javascript	Summer 2015

Teaching

Undergraduate Teaching Assistant <i>Georgia Institute of Technology, Atlanta, GA</i> Intro to Database Systems (CS 4400), Instructor: Monica Sweat Designed projects, held office hours and graded for relational databases class.	August 2017 - December 2018
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Leadership & Activities

January 2019 - May 2020

Student Ambassador

Georgia Institute of Technology Alumni Association

Serve as official representative of the Institute at events/tours for alumni, prospective students, and special guests.

January 2018 - May 2019

Executive Board Member -- Threads Co-chair

Stamps Scholars National Convention 2019

Executive board member of Stamps Scholars National Convention, a 3-day conference with over 700 student attendees. Responsible for 20-person committee that plans and coordinates the different content threads of the convention.

Sample Projects

December 2018

ICLR'19 Reproducibility Challenge

Implemented the architecture and reproduced results for an ICLR'19 submission using GANs to decorrelate sensitive data, titled Generative Adversarial Models for Learning Private and Fair Representations.

January 2018 - December 2018

Atlanta Crime Map

Led a team as part of Data Science Club at GT to analyze and visualize crime data on and around GT's campus to provide insight into crime frequency and details for GTPD.

February 2018

Citadel Datathon

Created supervised learning system to predict dangerous road areas to help make cities safer at Citadel and Correlation One's Datathon at Georgia Tech. Team placed top 3.

February 2017 - December 2017

RECONSO Research

Developed interface between core state machine and battery systems on Avionics team of student-led cube satellite project. Learned C while working on project.

Skills

Programming Languages: Python (Advanced), Javascript/Typescript (Intermediate), HTML (Intermediate), SQL (Intermediate), Java (Intermediate), C (Basic)

Toolkits, Frameworks, Software: Pytorch, Scikit-learn, Git, VegaLite, D3, Tableau, MacOS, Windows, Linux

Natural Languages: English (Native), Spanish (Advanced)